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How Prone is Poland to Exogenous Asymmetric Shocks?¹

Since the beginning of the 1990s, economic integration with European structures has been a strategic objective of Polish economic policy. The opening of the European Union (EU) accession negotiations in 1998 substantially increased the dynamics of this process and the importance of the negotiations goes far beyond the simple measurement of compliance with the *acquis communautaire* in respective fields.

The negotiation chapter related to the accession of Poland to the Economic and Monetary Union (EMU) closed in December 1999 defines the adoption of the euro as the final objective of the accession process and precisely describes the Polish path to the euro zone.² According to this document, the steps to be taken are: EU membership, participation in the Exchange Rate Mechanism II (ERM II) and adoption of the euro. Therefore, the crucial conclusion linked with this arrangement is that Poland will not be given an opt-out clause (such as that granted to the United Kingdom) and will be committed to the eventual adoption of the euro after its EU accession.³

One of the key issues of a monetary union is the exposure of its members to asymmetric shocks, i.e. changes of the economic environment affecting their economies to a different degree.⁴ For the EMU countries the importance of this issue is hard to overestimate. Since the introduction of the euro implies the abandonment of exchange rate flexibility, unemployment problems arising from

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¹ Views expressed in this article are those of the author and not necessarily those of the NBP.

² *European Union Common Position*, Conference on Accession of the European Union, CONF-PL 56/99, Brussels, 30 November 1999.

³ Therefore, every new EU Member State will be regarded by the European Central Bank as a future joiner of the euro zone. See: W.Duisenberg, *EU Enlargement, Some Views from the ECB*, (www.ecb.int).

⁴ K.Lutkowski, *Złoty w "korkociagu" (Złoty in Turbulence)*, „Nowe Życie Gospodarcze”, no. 48/1999.

asymmetric shocks can no longer be tackled by the appropriate exchange rate adjustment.⁵ For the EMU candidate countries this problem seems to be equally important. The purpose of this paper is therefore to identify potential risk areas that might generate asymmetric shocks in Poland. Apart from the presentation of relevant theoretical underpinnings, the analysis applied below concentrates exclusively on the exposure of the Polish economy to exogenous asymmetric shocks, i.e. adverse economic changes occurring beyond the borders of the euro zone (hereafter called the EMU-11) and Poland. Moreover, some of its implications and postulates for the optimum design of domestic economic policy in the period preceding Polish accession to the EMU are considered.

Why Are the Convergence Criteria Insufficient?

The debate surrounding the future Polish accession to the euro zone focuses mainly on the degree of compliance with monetary and fiscal criteria defined in the Maastricht Treaty and the economic logic of these conditions is widely known and accepted. The criteria on price levels and long-term interest rate differentials or exchange rate variability are in fact closely linked with each other. They are aimed at the stability of real exchange rates, which are conducive to stable flows on both current and capital accounts of the balance of payments.

The consolidation of public finances is supportive of the above mentioned goals. Reducing the public sector deficit results in changes to the domestic demand structure, favouring investments against consumption and lowering the pressure exerted by general government expenditures on the domestic price and interest rate level. Reducing general government debt, which most heavily weighs on the current budget expenditures, is necessary if the reduction of fiscal deficit is to be sustainable. Moreover, a lower budgetary imbalance provides a cushion absorbing the impact of adverse cyclical developments on budget revenues.

However, effective and sustainable compliance with the above conditions of nominal convergence in countries committed to adopting a single currency does not suffice to provide an appropriate framework for the smooth functioning of a newly born currency area. What still matters is the real convergence, i.e. a similarity of economic cycles in the countries whose intention is to peg their exchange rates to each other. The rationale behind this argument is that a real convergence insulates the countries with a single currency from the negative impact of asymmetric shocks. Once the condition of real convergence is met and the shocks hitting those economies are comparable, their negative influence on economic performance may be offset either by the appropriate adjustment

⁵ D.Gros, N.Thygesen, *European Monetary Integration, 2nd Edition*, Addison Wesley Longman, 1998.

of monetary policy pursued by a single central bank (endogenous shock) or the exchange rate adjustment of a single currency against the currencies of other countries (exogenous shock). Therefore, the bilateral exchange rate adjustment is not necessary to provide the external equilibrium in any of the addressed countries and their currencies may be pegged to each other without impairing the implementation of the domestic policy goals.⁶

Nevertheless, it should be noted that under certain circumstances the concept of a currency area may still be implemented, even though the economies of countries wishing to have a single currency show high degree of real divergence. Having their exchange rates fixed, countries affected by asymmetric shocks are still able to pursue their economic policy objectives successfully if wages are flexible and/or mobility of production factors is high.⁷ This problem is often raised in relation to the EMU countries, where the evidence indicates a significant persistence of wage rigidities⁸ and labour mobility remains low due to linguistic and other cultural impediments. It explains why so much attention is paid to the real convergence between the EMU countries.⁹

⁶ The divergence of the real business cycle is usually put forward as a key argument against the UK's accession to the euro zone. See: M.Baimbridge, B.Burkitt, P.Whyman, *Is Europe Ready for EMU? Theory, Evidence and Consequences*, (www.eurocritic.demon.co.uk). Compared to most EU members, the agricultural sector in the UK is small and the share of energy, media and financial sectors in the country's GDP is relatively high. The UK relies to a greater extent on high technology exports thus having different trade patterns than most of the EU countries. These differences imply a relatively low correlation between GDP growth rates in the UK and most of the EU countries.

⁷ R.Mundell (in: *A Theory of Optimum Currency Areas*, „*The American Economic Review*”, vol. 51, no. 4/1961) emphasised the importance of the latter pre-condition and his famous work opened a discussion about the theory of optimum currency areas (OCAs). The theory of OCAs is a collection of various economic indicators determining how a currency area will function after bilateral exchange rates are fixed. The most famous characteristics of the OCA are: degree of factor mobility and similarity of production structures (R.Mundell, op.cit.), openness of the economy (R.I.McKinnon, *Optimum Currency Areas*, „*The American Economic Review*”, vol. 53, no. 4/1963) degree of commodity diversification (P.Kenen, *The Theory of Optimum Currency Areas: An Eclectic View in: Monetary Problems of the International Economy*, ed. R.Mundell, A.Svoboda, University Chicago Press, 1969.), price and wage flexibility (B. Eichengreen, *European Monetary Unification*, „*Journal of Economic Literature*”, vol. 31, no. 3/1993), low inflation rates differentials (G.Haberler, *The International Monetary System: Some Recent Developments and Discussions in: Approaches to Greater Flexibility of Exchange Rates*, ed.G. Halm, Princeton University Press, 1970; J. Fleming, *On Exchange Rate Unification*, „*Economic Journal*”, vol. 81/1971.) The latter condition has been adopted as the Maastricht convergence criterion on price stability.

⁸ J.Borowski, *Znaczenie polityki kształtowania płac dla konkurencyjności krajów Europejskiej Unii Walutowej (The Importance of Salary Policy for EMU Countries' Competitiveness)*, „*Ekonomista*”, no. 6/1999.

⁹ A.Czarczyńska, *Obszary dywergencji w procesie integracji monetarnej w Europie (The Areas of Divergence in the Process of Monetary Integration in Europe)*, „*Wspólnoty Europejskie. Biuletyn Informacyjny*”, no. 10/99.

As far as Poland is concerned, the experience of the last 10 years of transformation suggests that rigid wages and low labour mobility are a feature of its economy. While wage rigidity is caused mainly by inflationary inertia and various indexation mechanisms incorporated in the wage-bargaining process,¹⁰ insufficient internal labour mobility mainly results from a housing scarcity. Moreover, the problem of immobile labour is complicated by the formal closure of the EU labour market to Poles, making the scale of external workforce mobility hard to assess. Nevertheless, one may assume that for several years after the eventual adoption of euro, both prevailing cultural barriers and the existence of transition periods regarding access to the EU labour market will significantly hamper the foreign job-migrations of Polish citizens.¹¹ Hence, in the foreseeable future movements of workforce and wages adjustments will not act as automatic equilibrators ensuring payments adjustments. Consequently, great importance must be attached to the empirical assessment of asymmetric shock exposure of the Polish economy.

Searching for Sources of Disturbances

Foreign trade is usually regarded as the most important channel of external shock transmission. Therefore, the degree of trade openness, i.e. the share of imports and exports in a country's GDP, determines to a great extent the impact of external disturbances on domestic economic activity. One of the key factors influencing the level of trade openness in Poland in the last decade was the liberalisation of trade, launched in 1990. An opening up of imports was necessary at the first stage of transformation, when market shortages had to be eliminated and the anti-inflationary policy of the national authorities had to be backed. It was accompanied by rising export activity, fostered mainly by the comparative advantage of the labour costs. Both exports and imports benefited substantially from a deep reduction of trade barriers pursued in line with the European Agreement and World Trade Organisation (WTO) arrangements.¹²

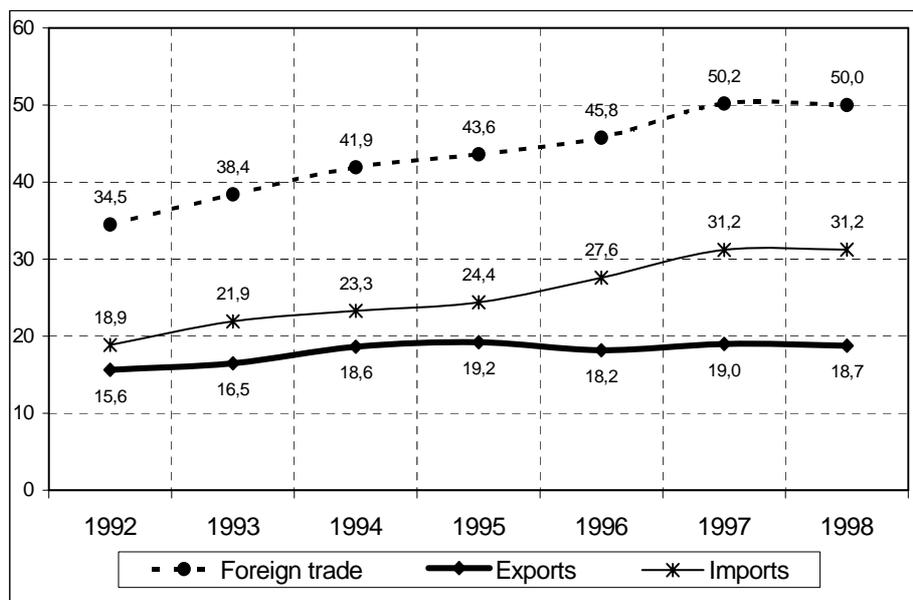
¹⁰ Z.Polański, *The Challenge of the European Monetary Integration and the Polish Monetary Policy*, Meeting the Convergence Criteria of EMU: Problems of Countries in Transition, Conference Papers, Polish Economic Society, Warsaw 1997.

¹¹ According to recent estimates carried out by the European Commission the potential number of Polish citizens wishing to work in the EU on a legal basis is surprisingly low and amounts to approx. 400,000 people. See: J.Bielecki, *Tylko Austria i Niemcy przeciw (Only Austria and Germany against)*, „Rzeczpospolita”, 25 January 2000.

¹² In 1999 the average custom fee imposed on imported goods amounted to 3.3% and was close to zero in the case of industrial goods See: *Studies on the Social Dimensions of Globalization. Poland*, International Labour Office, Task Force on Country Studies on Globalization, Geneva 1999.

Another reason behind the dramatic rise of export and import activity in Poland was a large inflow of foreign direct investment (FDI) especially in the second half of the decade.¹³ Nearly half of the FDI attracted (46 per cent) was located in the manufacturing sector, which normally has quite a large import penetration ratio and shows, as compared with other sectors of the economy, a relatively higher level of export orientation. This general trend towards greater trade openness in Poland lifted the share of total foreign trade in the country's GDP from 34.5 per cent in 1992 to 50 per cent in 1998 (see Chart 1). Hence, the level of economic activity in Poland became more dependent on external economic developments and its exposure to shocks of foreign origin substantially increased. This sensitivity found its empirical confirmation in 1998 and 1999, when demand shocks resulting from both the Russian financial crisis and economic slowdown in the EU countries substantially impeded economic growth in Poland.

**Chart 1. Trade openness in Poland
(as % of nominal GDP)**



- a) data used for calculations base only on trade in goods
- b) unregistered cross-border transactions are not included

¹³ In June 1999 the total FDI stock registered by the Polish Agency for Foreign Investments (PAFI) amounted to \$35.5 billion. See., *Foreign Direct Investment in Poland at the End of June*, Polish Agency for Foreign Investment, 1999, www.paiz.gov.pl/invest0699pr.htm.

Source: own calculations based on data from Central Statistical Office and National Bank of Poland.

It is patently obvious that in the case of a small and open economy the risk of being prone to external economic disturbances cannot be fully eliminated. However, as far as a currency area is concerned the negative consequences of a large degree of trade openness can be limited considerably if the probability of asymmetric shock occurrence is small. Consequently, the case of Poland and the EMU-11, which face different impacts of economic developments beyond their borders, requires profound examination. To approach this problem, the following issues should be taken into consideration:

- external equilibrium conditions;
- major trade partners; and
- trade patterns.

Quite large differences in the current account figures of Poland and the EMU-11 are the first potential risk area. While the euro zone economy recorded a current account surplus close to 1 per cent of GDP after the second quarter of 1999, the external disequilibrium in Poland in 1999 widened to 7.6 per cent of GDP, i.e. far beyond the typically recommended “safety border” of 4-6 per cent of GDP. These contrasting circumstances entail diametrically different reactions of the domestic economies of Poland and the EMU-11 to exogenous supply and demand shocks.

The reason for the different implications of external disturbances is that in the euro zone the existing current account surplus provides an efficient shock absorber that Poland lacks. Under current circumstances the exchange rate adjustment necessary to offset the possible shock in Poland is suppressed by the inflow of foreign capital attracted by large privatisation projects. It means that adverse economic changes outside Poland may cause further deterioration of the external imbalance to a level beyond the tolerance margin. This normally implies a rapid mood reversal of portfolio investors with easily predictable and mostly fatal consequences for the domestic economy. Since trade with Poland does not weigh heavily on the total extra-EMU-11 exports¹⁴, no counteraction of the European Central Bank (ECB), aimed at offsetting the negative impact of falling Polish imports, may be assumed. Hence, as long as the Polish economy balances on the “safety line” and the exchange rate adjustment is not able to play its equilibrating function, shocks occurring beyond the EMU-11 and Polish borders may bring different reactions by both economies. It should be noted that this scenario might not thoroughly exploit the above definition of asymmetry, i.e. external changes may affect the foreign trade transactions in the EMU-11 and Poland comparably. Nevertheless, the eventual implications for

¹⁴ In 1999 the share of exports to Poland in the total extra-EMU-11 exports was close to 3%.

both economies, entirely different in scale and a presumably passive reaction of the ECB imply *de facto* an asymmetric character of these shocks.

The achievement of comparable levels of exposure to adverse exogenous developments may be facilitated if two economic entities willing to form a currency area possess a similar structure of trade partners. A comparable level of trade integration between the analysed economic units is the practical manifestation of this rule. Therefore, in the case of Poland, exports to the EMU-11 as a proportion of total Polish exports and imports from the EMU-11 as a proportion of total Polish imports should be measured. Since 1992 both ratios have shown a rising tendency despite quite large fluctuations (see Chart 2). In consequence, the share of trade with the euro zone in the total foreign trade in Poland rose from 53.2 per cent in 1992 to 57.5 per cent in 1999.

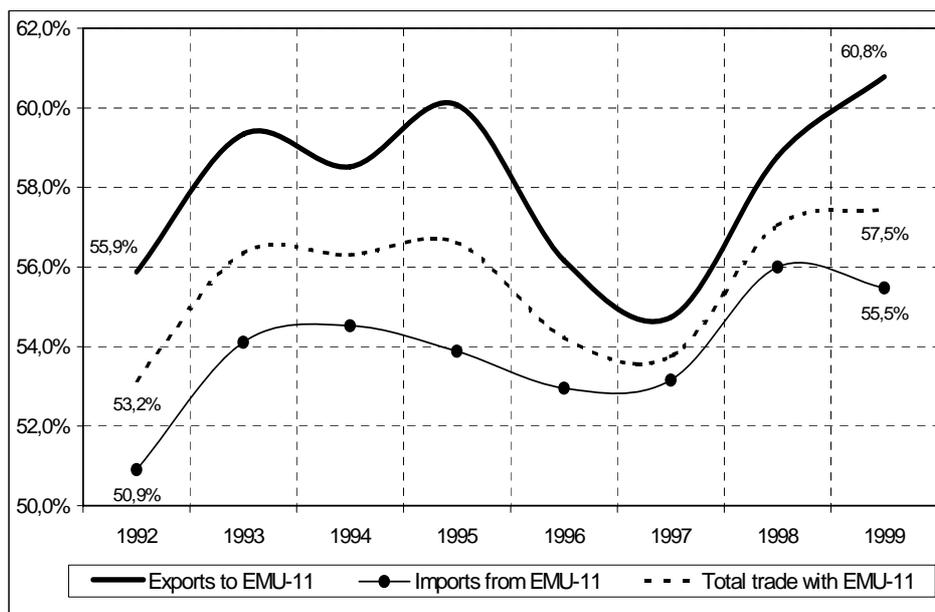
This process was driven by various factors and at least three of them should be mentioned. The first was a geographical proximity, making Germany the natural and first trade partner for Poland. The second determinant was a large inflow of FDI carried out by investors from the EMU countries,¹⁵ whose domestic economies usually functioned as the primary source of capital and destination markets for Polish exports. Thirdly, the Russian financial crisis in 1998 weakened the trade linkages between Poland and Eastern European countries considerably, thus automatically increasing the importance of the euro zone market for the external and internal trade turnover in Poland. As it was argued above, this trend towards greater trade integration between the EMU-11 and Poland was accompanied by the continuous rise of trade openness. Both phenomena increased the dependence of real economic developments in Poland on the level of economic activity in the euro zone.

Matching the above figures with those featuring the euro zone brings surprisingly positive conclusions for the Polish economy. In 1998 the share of intra-EMU-11 exports in the total exports of the EMU countries stood at 50.3 per cent with the share of intra-EMU-11 imports of total imports at 52 per cent.¹⁶ The same ratios for Poland accounted for 58.8 per cent and 56.6 per cent, respectively, and the Russian turmoil lifted these relations further in 1999. In consequence, the exposure to negative exogenous shock in Poland, illustrated by the share of external trade (i.e. trade carried out with countries staying out of the EMU) in the overall foreign trade transactions, turns out to be substantially lower than in the euro zone.

¹⁵ According to Polish Agency for Foreign Investment, in June 1999 56.5% of registered investors and 54% of the overall FDI stock originated from the EMU countries.

¹⁶ *Eurostat News Release*, no 29/99, 9 April 1999, (<http://europa.eu.int/eurostat.html>).

**Chart 2. Foreign trade between EMU-11 and Poland
(as % of respective foreign trade figure in Poland)**



a) for 1999 preliminary data from January to November were used

b) value of unregistered cross-border transactions is not included

Source: own calculations based on data from Central Statistical Office and Ministry of Economy.

The problem of exposure to asymmetric shocks of foreign origin may also be approached from the perspective of trade patterns. Since some groups of commodities may be exceptionally prone to demand or supply shocks, investigating the country's trade patterns provides another analytical framework suitable for identifying potential sources of exogenous disturbances. The mixed picture emerging from the data available in the euro zone and Poland confirms the importance of this factor.

As far as the import side is concerned, the commodity breakdown is quite similar and both economies show a comparable degree of exposure to supply shocks (see Table 1). The clearly different export structure suggests, however, that Polish exports, as compared with EMU figures, might be more vulnerable to external economic changes. This is mainly due to a relatively high share

of various manufactured articles (e.g. unprocessed manufactured goods) and a low level of advanced technology exports (machinery and transport equipment). A relatively large proportion of manufactured goods, containing mostly sub-components destined for further processing, makes export flows highly dependent on the current stage of business cycle in the countries of their destination. Unlike miscellaneous manufactured articles, machinery and transport equipment are normally less dependent on variations in foreign demand. On one hand, these goods are to a large extent necessary for the smooth functioning of the economies of their destination (e.g. ships or planes). On the other hand, technologically advanced machinery (e.g. cars) satisfies private consumption demand, which is less volatile than real GDP. Both factors provide a relatively stable foreign demand for these goods.¹⁷ Hence, as regards foreign trade patterns, the level of economic activity in Poland seems to be more exposed to exogenous shocks than the economy of the euro zone.

Optimum Design of Economic Policy

The existing exposure to exogenous asymmetric shocks would certainly be less problematic if Poland did not intend to join the EMU after its EU accession and instead retained the regime of floating exchange rates (both against euro and dollar). However, since the adoption of euro in Poland can be regarded as foregone, the ways to reduce its susceptibility to possible adverse external developments should be considered.

Table 1. Foreign trade patterns in the euro zone and Poland by percentage sections of Standard International Trade Classification (SITC) in 1998

	Specification	EXPORTS		IMPORTS	
		EMU-11	Poland	EMU-11	Poland
1.	Food, drink, tobacco	6.8	10.4	7.1	7.0
2.	Raw materials	2.0	3.0	5.8	4.1
3.	Energy	1.6	5.5	8.7	6.3
4.	Chemicals	13.1	6.7	9.5	13.6
5.	Other manufactured articles	27.8	46.0	28.3	30.0
6.	Machinery, transport equipment	46.6	28.4	37.8	38.8
7.	Other	2.1	0	2.8	0.2

¹⁷ This argument is sometimes used to explain the poor performance of Polish exports in 1999 as compared with other EU and EMU candidate countries. See: K.Rybiński, *Ikar na uwięzi (Binded Ikar)*, „Gazeta Bankowa”, no. 6/2000.

8.	Total	100%	100%	100%	100%
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Note: for EMU-11 data for external trade were used.

Source: Central Statistical Office and Eurostat.

The need to tackle the potential risk areas mentioned above, i.e. the external imbalance and unfavourable trade patterns, differs substantially in terms of urgency. Reducing the external disequilibrium should be regarded as a priority, while improving trade patterns is a longer-term aim. Nevertheless, it is sometimes argued that the fiscal authorities might stimulate the improvement of competitiveness of domestic exports by an appropriate expenditure policy aimed at co-financing the necessary science and research outlays.¹⁸

As far as the external disequilibrium is concerned, one might expect that its reduction should be accomplished by the joint efforts of the monetary and fiscal authorities. However, under current circumstances the possible commitment of the National Bank of Poland (NBP) is considerably limited. In order to explain this problem, the principles of the monetary policy strategy pursued by the NBP should be presented.

In 1999, the Monetary Policy Council adopted the strategy of direct inflation targeting (DIT) to enhance the effectiveness of anti-inflationary policy. The fundamental principle of this strategy is that the central bank observes the developments of various economic indicators related to its ultimate short-term and medium-term inflation targets and tailors its policy to their levels. The adoption of DIT also entails abandonment of the intermediate monetary policy goals, e.g. the exchange rate level or money supply growth.¹⁹ The MPC decision on a new monetary policy framework was followed by a continuous relaxation of the exchange rate regime.²⁰ Because of substantial interest rate differentials, high capital mobility and limited ability of NBP to sterilise the foreign capital inflow, these steps towards a more flexible exchange rate regime were necessary to increase the currency risk and retain control over domestic money supply. Hence the regime of factually floating exchange rates became an integral part of the new NBP strategy, thus increasing the role of the central bank interest rates as *de facto* the only instrument of monetary policy.²¹

¹⁸ A.Welfe, W.Welfe, R.Kelm, *Stagnacja czy ożywienie (Stagnacy or Boom)*, „Rzeczpospolita”, 6 September 1999.

¹⁹ *Medium-Term Strategy of Monetary Policy (1999-2003)*, National Bank of Poland, September 1998.

²⁰ In March 1999 the devaluation rate of the zloty against the currency basket was reduced from 0.5% to 0.3% per month and its fluctuation band against the central parity was widened from $\pm 12.5\%$ to $\pm 15\%$.

²¹ In July 1999, in order to increase the competitiveness of domestic banking sector the MPC decided to decrease the mandatory reserve requirements to 5% for all kinds of deposits. This step is widely interpreted as a signal that the role of this instrument will gradually disappear.

In light of the above conditions it seems to be understandable that rigorous tightening of monetary policy, though successful in combating inflation, might not bring the expected results in terms of reducing the external imbalance. A more restrictive monetary policy increases the difference between the level of interest rates in Poland and abroad. A higher disparity of interest rates might attract short-term portfolio capital and foster appreciation of the domestic currency, further widening the external imbalance. Even though the latter raises the overall country's risk, there still might be enough foreign portfolio investors ready to accept the trade-off between higher risk and greater risk premium.

Therefore, most of the burden of necessary adjustment should be taken over by the fiscal policy. Reducing the general government deficit would increase the country's savings. It would help reduce the gap between final demand and GDP, posing a considerable threat to sustainable growth. The current account deficit might then be brought back into the "safety area", where its role as a potential source of asymmetric shock exposure would disappear.